

### Remarks

#### Claim 18 Is Allowable Over A Combination Of The Smith And Riedl Patents

Claim 18 has been rejected under 35 U.S.C. §103(a) as being unpatentable over a combination of U.S. Patent No. 5,547,332 of Smith et al. and U.S. Patent No. 3,204,789 of Riedl.

The Smith patent describes a refuse collection vehicle having a frame 12 to which body 17 is mounted. Body 17 includes a hopper 19 located in front of a stowage bin 18, and a packer panel (not shown, but mentioned at column 4, lines 55-59) which is adapted to push refuse from the hopper into the stowage bin. The Smith device also includes container handling apparatus 30 to which container engaging mechanism 35 is attached, and which is adapted to lift a container and dump its contents into the hopper. The handling apparatus includes a mounting platform 33, comprising base 40 and carriage 42 which is slidably mounted on the base. The handling apparatus also includes a lift arm 34 comprising master bar 100, support link 104 and tension link 108. The master bar is pivotally attached at its first end to the carriage and at its second end to the first end of the support link and the first end of the tension link. The second end of the support link and the second end of the tension link are pivotally attached to container engaging mechanism 35. The mounting platform of the Smith vehicle is preferably located on top of body 17. By mounting the handling apparatus on top of the body, one of the objects of the Smith invention can be obtained, namely to allow "body 17 to be shifted forward on frame 12 to provide better weight distribution and a shorter wheel base" (col. 4, lines 38-43; *see also* column 2, lines 47-50). As the Office Action correctly points out, the Smith patent does not disclose a separate collection compartment that is pivotally mounted on the rear of the vehicle.

The Riedl patent discloses a collection vehicle having a trash collection compartment 2 mounted on its chassis. A tailgate or cover extension 3 is mounted at the rear end of the collection compartment so as to pivot upwardly about a horizontal pivot axis. The tailgate/cover extension encloses the rear end of the collection compartment, and includes a conveyor to convey refuse material into the collection compartment in the form of inwardly tapering conveyor wheel 6 that is mounted on four guide roller pairs 5 and adapted to be driven in a rotary direction. The conveyor wheel has a plurality of spaced ribs 9 on its inner surface, and it rotates about a hollow cone 10 which is attached to the cover extension. The cone has a filling opening 11 which is accessible from the outside of the vehicle, which opening communicates with a hollow annular cavity between the cone and the conveyor wheel. A helical-shaped scraping and pressing surface 12 projects into this annular cavity and extends around the cone from its apex at point S to point E (located beyond the filling opening). In operation, refuse is placed into the filling opening of the conveyor wheel, and the rotation of the wheel carries the refuse into the trash collection compartment. An exterior door 18 is also mounted on the side of the trash storage compartment to permit the loading of bulky items too large to pass through the conveyor wheel. A packer blade 17 is mounted in the front portion of the trash collection compartment and is adapted to be pushed rearwardly when the cover extension is raised to expel the trash from the collection compartment.

The Office Action states that it would have been obvious to one of ordinary skill in the art at the time the invention was made "to provide the device taught by Smith et al. with a rear collection compartment as taught by Riedl et al. in order to allow the device to be loaded from both the side and the rear as needed by an operator." However, the Riedl vehicle already includes means by

which refuse can be loaded from both the side (through door 18) and the rear (through conveyor wheel 6), so it seems unlikely that a person having ordinary skill in the art to which Applicants' invention relates would make the suggested combination for the reason given in the Office Action. In addition, one of the objects of the Smith patent, as stated at column 2, lines 47-50, is to provide "a top mounted container handling apparatus which allows the body of a refuse collection vehicle to be moved forward for better weight distribution." Adding the Riedl cover extension to the rear of the Smith vehicle (or adding a cover extension that has been modified by converting it to a collection compartment) would add additional weight to the rear of the vehicle, which presumably would require a longer wheelbase, thereby obviating one of the stated objectives of the Smith patent, as described above. Consequently, not only is there no motivation in either the Smith or the Riedl patents to make the suggested combination, but both patents teach away from the suggested combination.

Only by using the claimed invention as an instruction manual or template to piece together the teachings of the prior art can the invention of claim 18 be considered obvious in view of a combination of the Smith and Riedl patents, and such "hindsight reconstruction" of the invention is not permitted. See In re John R. Fritch, 972 F.2d 1260, 1266 (Fed. Cir. 1992).

Consequently, Applicants' claim 18 is not taught, suggested by or rendered obvious by a combination of the Smith and Riedl patents, and Applicants request, therefore, that this §103(a) rejection of their claim 18 be withdrawn and that claim 18 be allowed.

## Claims 19 And 21 Are Allowable Over A Combination Of The Smith, Riedl And Armstrong

### Patents

Claims 19 and 21 have been rejected under 35 U.S.C. §103(a) as being unpatentable over a combination of U.S. Patent No. 5,547,332 of Smith et al. and U.S. Patent No. 3,204,789 of Riedl, as applied in connection with claim 18, and further in combination with U.S. Patent No. 3,952,890 of Armstrong. The Office Action states that the Smith patent does not describe its "lifting arm as having articulated joints with parallel links."

Applicants agree that the container handling assembly 30 of the Smith patent does not have "parallel links". In other words, the container handling assembly of the Smith patent does not include a base link, upper link, reach link and lift arm that "are arranged and interconnected so that said upper link remains generally parallel to the base link throughout the operating cycle" of the container handling assembly, as is required by Applicants' claims 19 and 21.

The Office Action suggests that it would have been obvious to one of ordinary skill in the art at the time Applicants' invention was made "to provide the apparatus taught by Smith et al. in view of Riedl et al. with an articulated arm as taught by Armstrong in order to allow the device to pick up containers at close distances from the vehicle to operate in areas with restricted spaces such as alleyways."

The Smith and Riedl patents are described above. The Armstrong patent describes a hydraulically operated shovel having a bucket mounted at one end of a bucket arm. The other end of the bucket

arm is pivotally mounted on a main arm that is shorter than the bucket arm. The main arm is pivotally mounted on a chassis member. Three hydraulic rams are provided for moving the bucket. As described above in connection with the rejection of Applicants' claim 18, the skilled artisan at the time Applicants' invention was made would not be motivated to combine the teachings of the Smith and Riedl patents as suggested by the Office Action. However, even if such combination were made, the skilled artisan who combined the teachings of the Smith and Riedl patents with that of the Armstrong patent would have to make two modifications in order to obtain Applicants' invention of claims 19 and 21: (1) he would have to remove the container handling apparatus 30 of Smith; and (2) he would have to substitute the articulated arm of Armstrong. There is nothing in any of the Smith, Riedl or Armstrong patents which suggests these changes or which suggests any motivation for making them, especially since an examination of Figures 1 and 6 of the Smith patent appears to show that the Smith container handling apparatus is capable of picking up containers at close distances from the vehicle to permit operation in areas with restricted spaces such as alleyways.

Thus, Applicants respectfully assert that the suggested combination cannot support a rejection of their claims 19 and 21 in the manner described in the Office Action. Applicants submit therefore, that their claims 19 and 21 are not taught, suggested by or rendered obvious in view of a combination of the Smith, Riedl and Armstrong patents. Consequently, Applicants request that this §103(a) rejection of their claims 19 and 21 be withdrawn and that claims 19 and 21 be allowed.

Claims 22-24 Are Allowable In View Of A Combination Of The Smith, Riedl, Armstrong And Pickrell Patents

Claims 22-24 have been rejected under 35 U.S.C. §103(a) as being unpatentable over a combination of U.S. Patent No. 5,547,332 of Smith et al., U.S. Patent No. 3,204,789 of Riedl and U.S. Patent No. 3,952,890 of Armstrong, as applied in connection with claim 19, and further in combination with U.S. Patent No. 5,026,104 of Pickrell.

The Smith, Riedl and Armstrong patents are described above. The Pickrell patent discloses a container handling mechanism 26 which includes linear reciprocating boom 27 and grip actuating assembly 32. The grip actuating assembly includes first and second shafts 33 and 34 which are parallel and rotatably journaled within beam 29. Segment gear 35 and mounting bracket 37 (which carries a gripping arm) are carried by shaft 33 for rotation therewith. Similarly, segment gear 38 and mounting bracket 39 (which also carries a gripping arm) are carried by shaft 34. Lever 40 is drivingly engaged, at one end, to shaft 33. Operating rod 42 of hydraulic cylinder assembly 43 is pivotally connected to the other end of lever 40. The grip actuating assembly is movable between retracted and extended positions by actuation of cylinder assembly 43. The grip actuating assembly may also be tilted about an axis which is parallel to the long axis of the vehicle by actuation of hydraulic tilt cylinder 30.

As described above, in order to obtain Applicants' invention of claim 19, the skilled artisan who combined the teachings of the Smith, Riedl and Armstrong patents (despite Applicants' insistence that no motivation for such combination exists) would have to make two modifications that are not described or suggested by the Smith, Riedl and Armstrong patents. These

modifications are also not suggested by the Pickrell patent. In addition, in order to obtain Applicants' invention of claims 22-24, the skilled artisan who combined the teachings of the Smith, Riedl and Armstrong patents would also have to make two additional changes: (1) he would have to remove the container engaging mechanism 35 of Smith; and (2) he would have to substitute the grabber of Pickrell. There is nothing in any of the Smith, Riedl, Armstrong or Pickrell patents which suggests these further changes or which suggests any motivation for making them. Thus, Applicants respectfully assert that this combination cannot support a rejection of their claims 22-24 in the manner described in the Office Action. Applicants submit therefore, that their claims 22-24 are not taught, suggested by or rendered obvious in view of a combination of the Smith, Riedl, Armstrong and Pickrell patents. Consequently, Applicants request that this §103(a) rejection of their claims 22-24 be withdrawn and that claims 22-24 be allowed.

#### Claim 20 Is Allowable Over A Combination Of The Smith, Riedl and Moore Patents

Claim 20 has been rejected under 35 U.S.C. §103(a) as being unpatentable over a combination of U.S. Patent No. 5,547,332 of Smith et al., U.S. Patent No. 3,204,789 of Riedl and U.S. Patent No. 5,861,580 of Moore et al.

The Smith and Riedl patents are described above. The Moore patent describes a front-loader type collection vehicle which includes a collection bin 28 mounted on the vehicle frame and a lifting mechanism 16 which includes a pair of hydraulically operated actuators 18 on opposite sides of the truck for raising and lowering boom 20. The boom is pivotally connected to the side of the truck by

pivot pins 22, and a pair of front-extending arms 12 are pivotally connected to the boom by pins 24 and moved by hydraulically operated actuators 26.

The Office Action states that it would have been obvious at the time the invention was made to provide the vehicle of the Smith patent with the front loading device of the Moore patent.

However, even if a combination of the Smith and Riedl patents were made (despite Applicants' insistence that no motivation for such combination exists), Applicants believe that the container handling assembly of the Smith patent would interfere with the operation of a front loader assembly such as is described in the Moore patent. Therefore, in order to obtain Applicants' invention of claim 20, the skilled artisan who combined the teachings of the Smith, Riedl and Moore patents would have to make two additional modifications that are not described or suggested by any of these patents: (1) he would have to remove the container handling assembly of the Smith vehicle; and (2) he would have to substitute the front loading assembly of the Moore patent. There is nothing in the Smith, Riedl and Moore patents which suggests these modifications or which suggests any motivation for making them.

Only by using the claimed invention as an instruction manual or template to piece together the teachings of the prior art can the invention of claim 20 be considered obvious in view of a combination of the Smith, Riedl and Moore patents, and such "hindsight reconstruction" of the invention is not permitted. See In re John R. Fritch, 972 F.2d 1260, 1266 (Fed. Cir. 1992).



Applicants suggest therefore that their claim 20 is not taught, suggested by or rendered obvious in view of a combination of the Smith, Riedl and Moore patents. Consequently, Applicants request that this §103(a) rejection of their claim 20 be withdrawn and that claim 20 be allowed.

Applicants respectfully submit that all of their claims, as now presented, are patentable over the prior art references cited in the Office Action, including those made of record but not relied upon. Applicants request therefore that the rejections of their claims be withdrawn and that claims 18-23, as originally presented, and claim 24, as previously amended, be allowed.

Respectfully submitted,



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